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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/394,428	09/13/1999	CHARILAOS CHRISTOPOULOS	2466-35	4221

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EXAMINER

SENF, BEHROOZ M

ART UNIT

PAPER NUMBER

2613

DATE MAILED: 07/15/2003

12

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/394,428	CHRISTOPOULOS ET AL.	
	Examiner Behrooz Senfi	Art Unit 2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 25 April 2003.

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-4 and 9-26 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) 1,3,4,9,10,12,13,15,17,18,20 and 21 is/are allowed.

6) Claim(s) 2,11,14,16,19,22,23,25 and 26 is/are rejected.

7) Claim(s) 24 is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) <input type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ .
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .	6) <input type="checkbox"/> Other: _____ .

DETAILED ACTION

1. Applicant's arguments, see Brief (Paper no.11), filed April 25, 2003, with respect to claims 1, 2, 11, 22, 23, 25 and 26 have been fully considered and are persuasive. Therefore, Examiner withdraws the finality of that action (Paper no. 9, dated Oct. 29, 2002).

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 2, 11, 14, 16 and 19, are rejected under 35 U.S.C. 102(b) as being anticipated by Lee (US 5,107,345).

Regarding claim 2, Lee '345 discloses a discrete cosine transform (DCT) operation (i.e. abstract, lines 2 – 3), and the limitations “first processing circuitry for calculating a DCT of length $N/2 \times N/2$, N being a positive, even integer, to produce four sequences of coefficients” reads on (fig. 1, 10b, which is $N/2 \times N/2$ (8x8), to produce four sequence of coefficients QC8 of fig. 1, and second processing circuitry for “calculating a DCT of length $N \times N$ directly from the four sequences of coefficients”, reads on (fig. 2, MUX (second processing), that calculates/reconstruct the DCT of the original $N \times N$ from QC8).

Regarding claims 11, 16 and 19, Lee '345 discloses the claim limitation “under-sampling compressed frames by a certain factor in each dimension” reads on sub-sampling components by a factor of 4 “same as certain factor” in horizontal and vertical dimensions (i.e. col. 6, lines 61 – 62), and as for “decoding part in claim 16” see (i.e. fig. 6), and as for the limitations claimed

“calculating DCT of length NxN directly from 4 adjacent DCT coefficients block of size N/2xN/2 of the digitalized image” is similar to claim 2, see discussion regarding claim 2 please.

Regarding claim 14, limitations claimed are substantially similar to claims 1 and 11, and are the method of the processing, therefore the grounds for rejecting claims 1 and 11 also apply here.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 22 – 23 and 25 - 26, are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (US 5,107,345) in view of Zhu (US 5,870,146).

Regarding claims 22 and 23, Lee ‘345 discloses a discrete cosine transform (DCT) Operation for transmission and calculating a DCT of length N/2xN/2/NxN, groups of 4 adjacent blocks as discussed above with respect to claims 2 and 11. as for the additional limitation “extracting coefficients” as discussed above, Lee brakes the blocks to smaller blocks and performs/calculate the DCT coefficients, therefore extracting the respective coefficients to form the block would have been inherent in the process, and as for “selecting from the calculated coefficients, coefficients of the lowest frequencies” reads on (i.e. col. 2, lines 40+ of Lee), and non-overlapping block s NxN, reads on (i.e. col. 4, lines 9 of Lee).

Lee ‘345 fails to explicitly teach the use of “transcoder”.

However, the above claimed limitation is well-known in the art as evidenced by Zhu '146, in particular (i.e. fig. 6, transcoder 40, cols. 2 - 3, lines 64+) teaches transcoder convert the rate of bit-stream to the desired bit-stream based on the user or channel.

In view of the above, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the system of Lee '345 , as taught by Zhu '146 for the benefit of scaling based on the user protocol.

Examiner Note; DCT is a block converter, thus converts blocks based on the desired ratio and application (i.e. $N \times N$ or $N/2 \times N/2$ or $N \times M$, N is not equal to M and etc.).

Regarding claims 25 – 26, the claimed limitations are substantially similar to claims 22 – 23, therefore the grounds for rejecting claims 22 – 23 also apply here. Furthermore, for the additional limitation as claimed “multi-node control unit”, reads on Zhu’s multipoint control unit (MCU when multiple terminals are involved, please see (i.e. col. 3, lines 6+ of Zhu '146).

Allowable Subject Matter

6. Claims 1, 3 – 4, 9 – 10, 12 – 13, 15, 17 – 18 and 20 – 21 are allowed.
7. The following is a statement of reason for the indication of allowable subject matter: the prior art of the record fails to anticipate or rendered obvious the common conditional limitation “producing two sequences of coefficients of length $N/2$ from length $N/2$, N being a positive even integer” and $N/2$ being half of the data, this taken together with the other limitation as claimed.

Claims 3,4, 9,10, 13, 17 and 18 are allowed with respect to independent claims 1, 2, 12 and 15.

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8. Claim 24, is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reason for the indication of allowable subject matter:
Although Lee '345 teaches the equation common to claim 24 (equation 1), Lee '345 fails to teach the other equations and steps and their specific variables.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Behrooz Senfi** whose telephone number is **(703)305-0132**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Chris Kelley** can be reached on **(703)305-4856**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

Or faxed to:

(703) 872-9314

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

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Any inquiry of a general nature or relative to the status of the application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

B.S. B. S.

7/12/2003


CHRIS KELLEY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600